In the Claims:

Please amend the claims as follows:

1. (previously amended) A filament assembly constructed and adapted to fit within the ear canal of an individual for contacting the tympanic membrane directly and imparting audible vibrations thereto, said filament assembly being operational relative to a stationary vibration force element positioned in the ear canal at a distance from the tympanic membrane, said filament assembly comprising:

(a) a vibratory element adapted to be laterally positioned when said filament assembly is fitted within the ear canal, and arranged to respond to dynamic forces imparted by said vibrational force element, and

(b) a vibrational shaft element extending medially for transferring audible vibrations from said vibratory element to the tympanic membrane when said filament assembly is fitted within the ear canal,

said filament assembly being dynamically coupled to said stationary vibration force element so as to be statically floating and freely movable within an operable range with respect to said vibration force element, thereby allowing individual adjustment and positioning of said filament assembly for contacting the tympanic membrane and imparting audible vibrations without exerting static forces thereto.

Cl cont'd

2. (original) The filament assembly of claim 1, wherein said vibrational shaft element is sufficiently axially rigid to efficiently conduct vibrational energy at audible frequencies to the tympanic membrane.

3. (original) The filament assembly of claim 1, wherein said vibrational shaft element is radially flexible.

4. (original) The filament assembly of claim 1, wherein the length of said filament assembly is at least 6 mm.

5. (original) The filament assembly of claim 1, wherein the diameter (D) or

thickness (T) of said vibrational shaft element and said vibratory element is less than 0.4 mm.

6. (original) The filament assembly of claim **1**, wherein the ratio of length (L) of said filament assembly to diameter (D) or thickness (T) of said vibrational shaft element is greater than 25.

7. (previously amended) The filament assembly of claim **1**, wherein said filament assembly is separable from said vibration force element for placement and replacement of the filament assembly onto and from the vibration force element.

8. (original) The filament assembly of claim **1**, wherein said filament assembly weighs less than 20 mg.

9. (original) The filament assembly of claim **1**, wherein said vibratory element comprises a magnetic material which vibrates in response to a magnetic field produced from said vibration force element.

10. (original) The filament assembly of claim **9**, wherein said magnetic material of said vibratory element comprises a permanent magnet.

11. (previously amended) The filament assembly of claim **10**, wherein said permanent magnet is rod shaped.

12. . (previously amended) The filament assembly of claim **10**, wherein said permanent magnet is cylindrically hollow.

13. (original) The filament assembly of claim **1**, further comprising a tympanic coupling element adapted to contact said tympanic membrane for transferring said audible vibrations thereto.

14. (original) The filament assembly of claim **13**, wherein said tympanic coupling

element is articulated with respect to said vibrational shaft element via an articulation joint.

15. (original) The filament assembly of claim **14**, wherein said articulation joint comprises a ball and a socket system.

16. (original) The filament assembly of claim **14**, wherein said articulation joint comprises a rounded edge and a recess with magnetic attraction therebetween.

17. (original) The filament assembly of claim **13**, wherein said tympanic coupling element is radially slotted.

18. (original) The filament assembly of claim **13**, wherein said tympanic coupling element comprises two or more circumferential flaps.

19. (original) The filament assembly of claim **13**, wherein said vibrational shaft element comprises a rigid material selected from a group comprising metal, glass, and plastics.

20. (original) The filament assembly of claim **13**, wherein said tympanic coupling element is removably attachable to the tympanic membrane by means providing a relatively weak adhesion force.

21. (original) The filament assembly of claim **20**, wherein said relatively weak adhesion force means includes a layer of biocompatible agent between said tympanic coupling element and the tympanic membrane for providing adhesion therebetween.

22. (original) The filament assembly of claim **21**, wherein said biocompatible agent is selected from a group comprising gel and oil.

23. (original) The filament assembly of claim **21**, wherein said biocompatible agent is non-drying for providing long term adhesion between said tympanic coupling element and the tympanic membrane.

24. (original) The filament assembly of claim 13, wherein said tympanic coupling element is self-centering with respect to the umbo area of the tympanic membrane during attachment thereto.

25. (original) The filament assembly of claim 13, wherein said tympanic coupling element is arranged and adapted for surgical attachment to one of either the tympanic membrane or the associated malleus ossicle.

26. (original) The filament assembly of claim 13, wherein said tympanic coupling element is umbrella shaped.

27. (original) The filament assembly of claim 13, wherein said tympanic coupling element comprises a conic contact surface to fit within the external umbo area of the tympanic membrane.

28. (original) The filament assembly of claim 13, wherein said tympanic coupling element comprises a conforming surface for enhancing the contact with the external surface of the tympanic membrane.

29. (original) The filament assembly of claim 28, wherein said conforming surface is selected from a group comprising silicone, rubber, and gel.

30. (original) The filament assembly of claim 13, wherein said tympanic coupling element is composed of oxygen permeable material.

31. (original) The filament assembly of claim 1, wherein said vibration force element comprises adjustable projection means for adjusting the projection angle of said filament assembly when dynamically coupled to said vibration force element.

32. (original) The filament assembly of claim 1, wherein said vibration force element comprises an electromagnet coil.

33. (original) The filament assembly of claim 32, wherein said electromagnet coil comprises an air-core for accepting said filament assembly partially therein.

34. (original) The filament assembly of claim 1, wherein said vibration force element comprises a vibrating element for directly vibrating said vibratory element of said filament assembly.

35. (original) The filament assembly of claim 1, wherein said filament assembly conducts audible vibrations at least partially by means of axial motion of the filament assembly.

36. (original) The filament assembly of claim 1, wherein said filament assembly conducts audible vibrations at least partially by means of rocking motion of the filament assembly.

Cont

37. (original) The filament assembly of claim 1, wherein said filament assembly comprises an elongated thin strip selected from a group comprising piezoelectric, piezomagnetic or magnetostrictive elements.

38. (original) The filament assembly of claim 1, further comprising a handle for manipulation of said filament assembly during placement in and removal from the ear canal in association with said vibrational force element.

39. (original) The filament assembly of claim 1, further comprising lubricous means for minimizing contact friction of said filament assembly with said vibration force element.

40. (original) The filament assembly of claim 1, further comprising medication material selected from a group including anti-bacterial, anti-fungal and anti-microbial agents.

C

41. (currently amended) A canal hearing device adapted for directly contacting the tympanic membrane and imparting audible vibrations thereto, comprising:

(a) a floating vibrational filament assembly for contacting the tympanic membrane at its medial end,

(b) a stationary vibration force element positioned in the ear canal at a distance from the tympanic membrane and operably associated with said vibrational filament assembly,

said vibrational filament assembly ~~being~~ dynamically coupled to said vibration force element so as to be statically floating relative thereto and responsive to dynamic forces imparted by said vibration force element on said filament assembly for movement freely within an operable range in at least one degree of freedom with respect to said vibration force element, thereby allowing individual adjustment and positioning of said vibrational filament assembly for contacting the tympanic membrane and imparting audible vibrations without exerting essentially any static forces thereto.

42. (original) The canal hearing device of claim 41, wherein said vibrational filament assembly is at least 6 mm in length and shaft element of said vibrational filament assembly having a diameter of less than 0.4 mm.

43. (original) The canal hearing device of claim 41, wherein said vibrational filament assembly is separable from said vibrational force element for placement and replacement therein.

44. (original) The canal hearing device of claim 41, wherein said vibrational filament assembly further comprises a vibratory element coupled to said vibrational filament assembly and responsive to dynamic vibration forces imparted by said vibration force element.

45. (original) The canal hearing device of claim 44, wherein said vibratory element is composed of magnetic material for responding to magnetic field produced from said vibration force element.

46. (original) The canal hearing device of claim 44, wherein said vibratory element is responsive to a vibrating element incorporated within said vibration force element.

47. (original) The canal hearing device of claim 41, wherein said vibrational filament assembly further comprising a tympanic coupling element adapted to contact the tympanic membrane for transferring said audible vibrations thereto.

48. (original) The canal hearing device of claim 47, wherein said tympanic coupling element is articulated with respect to shaft element of said vibrational filament assembly via an articulation joint comprising a ball and a socket system.

49. (original) The canal hearing device of claim 47, wherein said tympanic coupling element is adapted for removable attachment to the tympanic membrane by means providing a relatively weak adhesion force.

C1 Cont

50. (original) The canal hearing device of claim 49, wherein said relatively weak adhesion force means includes a layer of biocompatible agent between said tympanic coupling element and the tympanic membrane for providing adhesion therebetween.

51. (original) The canal hearing device of claim 50, wherein said biocompatible agent is selected from a group comprising gel and oil.

52. (original) The canal hearing device of claim 47, wherein said tympanic coupling element is self-centering with respect to the umbo area of the tympanic membrane during attachment thereto.

53. (original) The canal hearing device of claim 47, wherein said tympanic coupling element is substantially umbrella-shaped.

54. (original) The canal hearing device of claim 41, wherein said vibration force element comprises adjustable projection means for adjusting the projection angle of said

C

vibrational filament assembly when dynamically coupled to said vibration force element.

55. (original) The canal hearing device of claim **41**, wherein said vibrational filament assembly is arranged and adapted to at least partially undergo axial motion to conduct audible vibrations to the tympanic membrane.

56. (original) The canal hearing device of claim **41**, wherein said vibrational filament assembly is arranged and adapted to at least partially undergo rocking motion to conduct audible vibrations to the tympanic membrane.

57. (original) The canal hearing device of claim **41**, further including retainer means for stabilizing and securing said canal hearing device within the ear canal of the wearer.

58. (original) The canal hearing device of claim **57**, wherein said retainer means comprises one or more pairs of foldable wings.

Cont

59. (original) The canal hearing device of claim **57**, wherein said retainer means comprises a biocompatible adhesive for adhering and securing said hearing device to the walls of the ear canal.

60. (original) The canal hearing device of claim **41**, comprising a hearing aid constructed and adapted to be worn completely within the ear canal of a hearing impaired individual.

61. (original) The canal hearing device of claim **41**, wherein said hearing device is constructed and adapted to be positioned substantially within the bony portion of the ear canal of the wearer.

62. (original) The canal hearing device of claim **41**, wherein said hearing device provides a highly energy efficient system, by virtue of directly vibrating the tympanic membrane, sufficient to enable said hearing device to be operational in the ear canal of the

C

wearer for a period exceeding two months before dissipation of its battery to an extent requiring replacement of said hearing device or said battery.

63. (original) The canal hearing device of claim **41**, further including remote control means adapted to be positioned substantially external to the ear canal of the wearer of said hearing device for adjusting and controlling said hearing device worn in the ear canal of said wearer.

64. (original) The canal hearing device of claim **63**, further including a magnetically activated switch, and wherein said remote control means comprises an external magnetic device for operating said magnetically activated switch.

65. (original) The canal hearing device of claim **41**, further including an acoustically transparent debris guard for protecting a microphone of said canal hearing device against damage from moisture and debris present in the ear canal.

66. (original) The canal hearing device of claim **41**, comprising a plurality of removable disposable elements including said vibrational filament assembly, a battery, an acoustically transparent debris guard, an acoustic screen, and a device retainer.

67. (original) The canal hearing device of claim **41**, further including an external fitting system connectable to said canal hearing device for conducting audiometric evaluation, device programming and fitting prescription for a subject wearing said hearing device.

68. (original) The canal hearing device of claim **41**, comprising a wireless receiver for receiving wireless signals representative of audio signals from an external audio transmitter, said hearing device being responsive to received wireless signals for conversion thereof to audible vibrations representative of said audio signals.

69. (original) The canal hearing device of claim **41**, wherein said vibration force element comprises at least one electromagnet coil.

C

70. (original) The canal hearing device of claim **69**, wherein said electromagnet coil comprises an air-core for accepting part of said vibrational filament assembly therein.

71. (original) The canal hearing device of claim **41**, wherein said vibration force element comprises at least one vibrational transducer having a vibrating element.

72. (original) The canal hearing device of claim **41**, wherein said vibration force element comprises a shield for minimizing at least one of electrical noise signals or magnetic noise signals present in the environment.

73. (original) The canal hearing device of claim **41**, comprising means for rendering said hearing device substantially non-occlusive within the ear canal of the wearer to avoid occlusion effects.

Cont

74. (original) The canal hearing device of claim **41**, comprising means for rendering said hearing device substantially non-occlusive within the ear canal of the wearer to enable simultaneous perception of sound though vibratory conduction via said vibrational filament assembly, and through air-conduction via air in the non-occluded ear canal.

75. (original) The canal hearing device of claim **41**, comprising means for manipulating said vibrational filament assembly for attachment to the tympanic membrane in cooperation with an external manual tool adapted for at least partial insertion into the ear canal.

76. (original) The canal hearing device of claim **41**, comprising means for manipulating said vibrational filament assembly for attachment to the tympanic membrane in cooperation with an optical fiber for enhancing viewing of said manipulation and attachment.

77. (original) The canal hearing device of claim **41**, comprising means for manipulating said vibrational filament assembly for attachment to the tympanic membrane in cooperation with a probe tube and corresponding probe tube acoustic measurements.

78. (original) The canal hearing device of claim **41**, comprising means for manipulating said vibrational filament assembly for attachment to the tympanic membrane in cooperation with momentary static forces generated by said vibration force element.

79. (original) The canal hearing device of claim **41**, further comprising lubricous means for minimizing contact friction between said vibrational filament assembly and said vibration force element.

80. (original) The canal hearing device of claim **41**, further comprising magnetic material for attraction to a magnetic implant surgically positioned in the ear canal underneath the skin, for securing said hearing device within said ear canal.

81. (original) The canal hearing device of claim **41**, further comprising medication material selected from a group including anti-bacterial, anti-fungal and anti-microbial agents.

82

~~83.~~ (previously amended) A hearing device constructed and adapted to fit and be worn within the ear canal of a human subject for imparting audible vibrations to the tympanic membrane of the subject, comprising:

a microphone for receiving the incoming signals representative of audio signals and converting them to electrical signals;

an amplifier for processing and amplifying the electrical signal output of the microphone;

a vibration force element responsive to said amplified signals for conversion thereof to dynamic forces representative of said incoming signals; and

a vibrational filament assembly dynamically coupled to said vibration force element and responsive to said dynamic forces imparted by said vibration force element,

said vibrational filament assembly being essentially free floating within an operable range in at least one degree of freedom with respect to said vibration force element, thereby allowing individual adjustment and positioning of said vibrational filament assembly for contacting the tympanic membrane and imparting audible vibrations without exerting essentially any static forces thereto.

~~84~~ 83. (original) The hearing device of claim ~~83~~ 82, wherein said vibrational filament assembly further comprises:

(a) an umbrella-shaped tympanic coupling element for contacting and adhering to said tympanic membrane and conducting vibrations thereto, and

(b) a vibrationally conductive shaft articulated with said tympanic coupling element.

~~85~~ 84. (previously amended) A method of imparting audible vibrations on the tympanic membrane of an individual comprising the steps of:

(a) attaching a vibratory filament assembly at its medial end to the tympanic membrane; and

(b) dynamically coupling said vibratory filament assembly to a vibration force element so that said vibrational filament assembly is essentially free floating within an operable range, in at least one degree of motion freedom, with respect to said vibration force element to allow individual adjustment and positioning of said vibrational filament assembly for contacting the tympanic membrane; and

(c) imparting mechanical vibrations representative of audio signals on the lateral end of said vibratory filament assembly by means of said vibration force element so as to impart audible vibrations to the tympanic membrane without exerting essentially any static forces thereon.

~~86~~ 85. (original) The method of claim ~~85~~ 84, including employing a tympanic coupling element at said medial end of said vibratory filament assembly for contact with the tympanic membrane.

~~87~~ 86. (original) The method of claim ~~86~~ 85, including providing weak adhesion forces between the surface of said tympanic coupling element and the tympanic membrane so that said tympanic contact element is removably attachable to the tympanic membrane, said weak adhesion forces being sufficiently strong to secure said tympanic coupling element to the tympanic membrane and conduct audible vibrations thereto.

~~88~~ 87. (original) The method of claim ~~87~~ 86, including providing said weak adhesion

forces at least partially by applying a thin layer of biocompatible liquid agent between the surface of said tympanic coupling element and the tympanic membrane.

88 85
~~89.~~ (original) The method of claim ~~86~~, including pre-coating the tympanic membrane with a liquid agent for adhering said tympanic coupling element to the tympanic membrane.

89 85
~~90.~~ (original) The method of claim ~~86~~, including joining said tympanic coupling element by articulation means to a shaft element of said vibratory filament assembly for articulating and adjusting said tympanic coupling element according to individual tympanic membranes.

Cancel. 90 89
~~91.~~ (original) The method of claim ~~90~~, including using a ball joint system as said articulation means.

91 85
~~92.~~ (original) The method of claim ~~86~~, including shaping said tympanic coupling element for fitting and securing thereof within the external umbo area of the tympanic membrane.

92 84
~~93.~~ (original) The method of claim ~~85~~, including manipulating and attaching said vibratory filament assembly to the tympanic membrane at least in part by any of direct visualization, optical fiber visualization, acoustic probe tube measurements and momentary static forces.